

CLAIMS:

What is claimed is:

1. A method of handling Write input/output (I/O) requests during a backup operation on at least one storage device, comprising:

receiving a Write I/O request for performing a Write I/O operation to a logical volume, wherein at least a portion of the logical volume resides on the at least one storage device;

logging the Write I/O request in a file system log indicating that the Write I/O request is being submitted to the at least one storage device;

determining if a backup operation is being performed on the at least one storage device; and

suspending the Write I/O operation in a logical volume manager until after the backup operation is completed if it is determined that the backup operation is being performed, wherein Write I/O operations to at least one other logical volume are not suspended during the backup operation.

2. The method of claim 1, wherein suspending the Write I/O operation includes:

storing the Write I/O request in a hold queue in the logical volume manager, wherein the Write I/O request is not forwarded to the at least one storage device while the Write I/O request is in the hold queue.

3. The method of claim 1, wherein determining if a backup operation is being performed includes:

 determining if a backup flag is set in a logical volume manager.

4. The method of claim 3, wherein the backup flag is set in response to receipt of a message from a backup application indicating that a backup operation has been initiated.

5. The method of claim 1, wherein the backup operation is a point-in-time backup operation.

6. The method of claim 2, further comprising:

 receiving a message indicating that the backup operation is complete; and

 releasing the Write I/O request from the hold queue in response to receiving the message; and

 submitting the Write I/O request to the at least one storage device.

7. The method of claim 2, wherein the hold queue is a linked list in which Write I/O requests are stored in an order in which they are received by the logical volume manager.

8. The method of claim 6, wherein Write I/O requests in the hold queue are released from the hold queue in an order in which they were received by the logical volume manager.

9. The method of claim 6, further comprising:
 updating file system metadata based on the file system log only after the backup operation is complete and the Write I/O operation is released from the hold queue.
10. The method of claim 1, wherein the Write I/O request is suspended only if the Write I/O request is for a Write I/O operation that would result in a change in file system meta data.
11. The method of claim 1, wherein the Write I/O request is suspended only if the Write I/O request is to a block of data that is subject to the backup operation.
12. A computer program product in a computer readable medium for handling Write input/output (I/O) requests during a backup operation on at least one storage device, comprising:
 - first instructions for receiving a Write I/O request for performing a Write I/O operation to a logical volume, wherein at least a portion of the logical volume resides on the at least one storage device;
 - second instructions for logging the Write I/O request in a file system log indicating that the Write I/O request is being submitted to the at least one storage device;
 - third instructions for determining if a backup operation is being performed on the at least one storage device; and

fourth instructions for suspending the Write I/O operation in a logical volume manager until after the backup operation is completed if it is determined that the backup operation is being performed, wherein Write I/O operations to at least one other logical volume are not suspended during the backup operation.

13. The computer program product of claim 12, wherein the third instructions for suspending the Write I/O operation include:

instructions for storing the Write I/O request in a hold queue in the logical volume manager, wherein the Write I/O request is not forwarded to the at least one storage device while the Write I/O request is in the hold queue.

14. The computer program product of claim 12, wherein the second instructions for determining if a backup operation is being performed include:

instructions for determining if a backup flag is set in a logical volume manager.

15. The computer program product of claim 14, wherein the backup flag is set in response to receipt of a message from a backup application indicating that a backup operation has been initiated.

16. The computer program product of claim 12, wherein the backup operation is a point-in-time backup operation.

17. The computer program product of claim 13, further comprising:

fourth instructions for receiving a message indicating that the backup operation is complete; and fifth instructions for releasing the Write I/O request from the hold queue in response to receiving the message; and

sixth instructions for submitting the Write I/O request to the at least one storage device.

18. The computer program product of claim 13, wherein the hold queue is a linked list in which Write I/O requests are stored in an order in which they are received by the logical volume manager.

19. The computer program product of claim 17, wherein Write I/O requests in the hold queue are released from the hold queue in an order in which they were received by the logical volume manager.

20. The computer program product of claim 17, further comprising:

seventh instructions for updating file system metadata based on the file system log only after the backup operation is complete and the Write I/O operation is released from the hold queue.

21. The computer program product of claim 12, wherein the Write I/O request is suspended only if the Write I/O

request is for a Write I/O operation that would result in a change in file system meta data.

22. The computer program product of claim 12, wherein the Write I/O request is suspended only if the Write I/O request is to a block of data that is subject to the backup operation.

23. An apparatus for handling Write input/output (I/O) requests during a backup operation on at least one storage device, comprising:

means for receiving a Write I/O request for performing a Write I/O operation to a logical volume, wherein at least a portion of the logical volume resides on the at least one storage device;

means for logging the Write I/O request in a file system log indicating that the Write I/O request is being submitted to the at least one storage device;

means for determining if a backup operation is being performed; and

means for suspending the Write I/O operation in a logical volume manager until after the backup operation is completed if it is determined that the backup operation is being performed, wherein Write I/O operations to at least one other logical volume are not suspended during the backup operation.